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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,608	03/19/2004	Fufang Zha	USFMC.R.66C2C1C2	9622
28524	7590	06/29/2005	EXAMINER	
SIEMENS CORPORATION INTELLECTUAL PROPERTY DEPARTMENT 170 WOOD AVENUE SOUTH ISELIN, NJ 08830			SORKIN, DAVID L	
			ART UNIT	PAPER NUMBER
			1723	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/805,608

Applicant(s)

ZHA ET AL.

Examiner

David L. Sorkin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 30-42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. These claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claim 30, "intermittently supplying a pressurized gas during filtration" is not described. Regarding claim 31, "backwashing...while intermittently supplying pressurized gas" is not described. Regarding claim 34, recitation of the step of applying transmembrane pressure comprising intermittently supplying gas is not supported by the original disclosure. Regarding claim 35, the negative limitation "in the absence of gas bubbles" is not described. Regarding claim 36, recitation that the membranes are connected to a source of pressurized is essentially the opposite of the described invention, which instead involves "means other than" providing pressurized gas to the membranes, such as providing pressurizes gas to a comb of tubes, or to holes in a header. Likewise recitation that the array of membranes "is configured to provide gas bubbles" is the opposite of the invention, which instead involves tubes or holes other the pores of the membranes providing gas bubbles. Regarding claim 41, a "feed liquid comprising a

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fouling material" is not described. Further regarding claim 41, "intermittently introducing gas bubbles ... while applying a transmembrane pressure" is not described.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 35 is rejected under 35 U.S.C. 102(b) as being anticipated by Sunaoka et al. (US 5,151,191). Sunaoka ('191) discloses a method of removing accumulated solids from membranes (2), wherein the membranes are situated in a vessel (9), the method comprising applying, in the absence of bubbles, a transmembrane pressure to the membranes, whereby filtrate passes through pores in the membrane (see col. 6, lines 57-62); backwashing the membranes so as to dislodge accumulated solids from the surfaces of the membranes, while simultaneously (see col. 1, lines 46-49, "during") providing gas bubbles from a source of pressurized gas (see col. 6, lines 61-63), wherein the gas bubbles scour the surfaces of the membranes (see col. 7, lines 36-45); and thereafter removing dislodged accumulated solids from the vessel (see col. 7, lines 46-49).

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5. Claims 43-45 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 61-192309. Regarding claim 43, JP 61-192309 discloses a membrane module comprising a plurality of porous membranes (2) forming an array, the module having a first header ('3', the lower one in Fig. 1) in which one end of each of the membranes is mounted, the first header connected to a source (6). Regarding claim 44, the membranes comprising hollow membrane fibers (2), each fiber having an upper end and a lower end, the fibers extending longitudinally between and mounted at the upper end to a second header ('3', the upper one in Fig. 1) and at the lower end to the first header, wherein the fibers are sealed at the lower end and open at the upper end to allow removal of filtrate (see page 3, lines 8-9 of the English translation), the fibers being arranged in close proximity to one another and mounted in a bundle in a substantially taut manner between the first header and the second header to prevent excessive movement therebetween, the fibers being substantially uniformly mounted in the first header relative to a distributed array of aeration holes (5) in the first header. Regarding claim 45, the distributed array of the aeration holes is not solely peripheral to the distribution of membranes in the first header (see Fig. 2).

6. Claim 43 is rejected under 35 U.S.C. 102(e) as being anticipated by Mahendran et al. (US 5,639,373). Mahendran ('373) discloses a membrane module comprising a plurality of porous membranes (12) forming an array, the module having a first header (101) in which one end of each membrane is mounted, the first header connected to a source (104 or 105).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sunaoka et al. (US 5,151,191) in view of Mahendran et al. (US 5,639,373). Regarding claim 31, Sunaoka ('191) discloses a method of removing accumulated solids from membranes (2) situated in a vessel (9), the method comprising the steps of applying a transmembrane pressure to the membranes, whereby filtrate passes through pores in the membrane (see col. 6, lines 57-62); backwashing the membranes so as to dislodge accumulated solids from the surfaces of the membranes, while (see col. 1, lines 46-49, "during") providing a pressurized gas (see col. 6, lines 61-63) to form gas bubbles, wherein the gas bubbles scour the surfaces of the membranes (see col. 7, lines 36-45);

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and removing dislodged accumulated solids from the vessel (see col. 7, lines 46-49). It is not expressly stated the providing of gas is intermittent. Mahendran et al. ('373), col. 5, lines 26-28 and col. 6, lines 50-53 is relied upon as evidence that intermittent vs. continuous supply of gas for bubble are recognized alternative in the art for cleaning membranes. Regarding claims 32 and 33, Sunaoka ('191) discloses backwashing with liquid (see col. 1, lines 46-49); however, back washing with gas is not disclosed. Applicant admits on page 13, lines 7-9 of the instant specification that backwashing with liquid and backwashing with gas are "standard" art recognized backwashing methods; therefore it is considered that it would have been obvious to one of ordinary skill in the art to have backwashed the membranes of Sunaoka ('191) with a gas instead of a liquid.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 43-45 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,156,200.

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Although the conflicting claims are not identical, they are not patentably distinct from each other for the following reasons: All the structural limitations of claims 43 and 44 are clearly recited in claim 1 of U.S. Patent No. 6,156,200. The discussion of the intended use of feeding gas intermittently does not imply a structural difference. The limitation in claim 45 "the distributed array of the aeration holes is not solely peripheral to the distribution of membranes in the first header" is disclosed or suggested by the phrase "the aeration holes in the lower potting head are sized and located such that bubbles...pass substantially uniformly between the fibers".

12. Claims 43-45 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claim set of U.S. Patent No. 6,555,005. All the limitations of claim 43, are disclosed in independent claim 1 (and therefore each claim) of US 6,555,005. Other claims further disclose the further limitations of claims 44 and 45. See especially claims 2 and 15.

13. Claim 43 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 12 of copending Application No. 10/042,128. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the limitations of instant claim 43 are recited in claim 12 of 10/042,128.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented

14. Claims 31-33, 35 and 43 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claim set

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of copending Application No. 10/369,813. Although the no single claim of 10/369,813 discloses all the limitations of claims 31 or 35, all the limitations of claims 31-33 and 35 are disclosed in the claim set of 10/369,813. See particularly claims 43, 44, 46, 48, 53, 60 and 61.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

15. Claim 43 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 2 of copending Application No. 10/674,694. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the limitations of instant claim 43 are recited in claim 2 of 10/674,694.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

16. Applicant's statements that all the previously pending claims have been canceled and new claims added to pursue different subject matter are acknowledged.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 571-272-1148. The examiner can normally be reached on 9:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'D. L. Sorkin', written in a cursive style.

David L. Sorkin
Primary Examiner
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DLS